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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/625,885      | 07/23/2003  | Andrew Wells Phelps  | UVD 0279 IA/UD 267  | 3049             |

7590 08/22/2006  
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| EXAMINER |
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HAILEY, PATRICIA L

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| ART UNIT | PAPER NUMBER |
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1755

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                       |                                      |  |
|------------------------------|---------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/625,885  | <b>Applicant(s)</b><br>PHELPS ET AL. |  |
|                              | <b>Examiner</b><br>Patricia L. Hailey | <b>Art Unit</b><br>1755              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-77 and 79-106 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-77 and 79-106 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02/27/06, 04/14/06</u> . | 6) <input checked="" type="checkbox"/> Other: <u>IDS filed 07/12/06</u> .               |

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Applicants' remarks and amendments, filed on June 13, 2006, have been carefully considered. No claims have been canceled; new claims 105 and 106 have been added. Claims 1, 3-77, and 79-104 are now pending in this application.

### ***Withdrawn Rejections***

The 112(2) rejections of claims 3, 79, and 85-90 stated in the previous Office Action have been withdrawn in view of Applicants' amendments to these claims to change their dependencies.

### ***Maintained Rejections***

The following rejections of record have been maintained; the text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Claim Rejections - 35 USC § 102***

***1. Claims 1, 3-77, and 79-104 stand, and new claims 105 and 106 are, rejected under 35 U.S.C. 102(b) as being anticipated by Tadakoro et al. (WO 98/48075, with U. S. Patent No. 6,200,672 as its English language equivalent; citations in the patent are employed herewith).***

Tadakoro et al. disclose a rare earth metal element as a complex and/or salt with an organic compound for mixed dispersion in a layer on a metal sheet, to effectively

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inhibit corrosion of the metal sheet. See col. 2, lines 38-46 and lines 52-61 of Tadakoro et al.

The complex comprises a rare earth metal element and an organic compound having in the molecule one or more functional groups such as  $\text{-COOH}$ ,  $\text{-O-}$ ,  $=\text{O}$ ,  $\text{-OH}$ ,  $\text{-NH}_2$ , sulfidic and phosphoric groups, etc., and a matrix capable of physically holding said complex and/or salt and having adhesive power for metal sheets. Additionally, the complex exhibits a solubility in water at pH 3 and below of at least 0.1 mol/l, based on the rare earth element. See col. 3, lines 12 to col. 4, line 41 of Tadakoro et al., which also teaches examples of the matrix (e.g., a resin, orthophosphoric acid, oxyacid compounds, etc.).

Examples of the organic compound forming the complex are found at col. 5, lines 10-31 of Tadakoro et al.; the solubility of the complex in water at pH 6-7 is no greater than 0.01 mol/l, based on the rare earth metal element (lanthanum or cerium, see col. 5, lines 5-9). See col. 5, lines 10-54 of Tadakoro et al.

See also 6, line 59 to col. 8, line 3 of Tadakoro et al. for additional functional groups for forming the complex, as well as additional examples of the matrix.

At col. 9, line 26 to col. 10, line 9 of Tadakoro et al., the reference discusses employing oxyacid compounds of the rare earth metal elements (which encompasses compounds formed between anions such as phosphate, tungstate, vanadate, etc., with rare earth metals) to form inorganic-based corrosion resistance chemical treatment layers. To these layers, additives such as alkali metal phosphates, phosphates of

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aluminum and zirconium, etc., may be added. See col. 10, lines 10-19 of Tadakoro et al.

In view of these teachings, Tadakoro et al. anticipate claims 1, 3-77, and 79-106.

**2. Claims 1, 3-77, and 79-104 stand, and new claims 105 and 106 are, rejected under 35 U.S.C. 102(b) as being anticipated by DePue et al. (U. S. Patent No. 5,322,560).**

DePue et al. disclose a corrosion inhibitor that is the reaction product of a water-soluble metal salt (including metals selected from yttrium and rare earth metals) and an anionic metal salt including transition metal oxo-complexes and soluble salts of silicon and mixtures thereof. See the Abstract of DePue et al., as well as col. 2, lines 27-36, in which DePue et al. disclose titanium, vanadium, chromium, zirconium, niobium, molybdenum, hafnium, tantalum, tungsten, and mixtures thereof as exemplary transition metals (see also col. 3, lines 1-22 of DePue et al., which also discloses that the inhibitor is "slightly water-soluble", defined as no more than  $10^{-3}$  molar concentration in a saturated aqueous solution).

The corrosion inhibitors are useful when used in combination with water-soluble salts of trivalent yttrium, trivalent cerium, and tetravalent cerium. See col. 2, lines 56-60 of DePue et al.

The inhibitors are useful in treating aluminum flake pigment particles (col. 2, lines 64-68), by forming a slurry of deionized water, corrosion inhibitor, and pigment, optionally with a solvent. See col. 3, lines 35-43 of DePue et al.

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The inhibitors are effective in coating compositions, when used as a secondary corrosion inhibitor. See col. 4, lines 32-61 of DePue et al., as well as col. 5, line 10 to col. 6, line 60, which also discloses exemplary coating compositions and their additives (resins, rheology control agents, etc.), as well as exemplary substrates to which the coating compositions can be applied (col. 6, lines 39-49).

In view of these teachings, DePue et al. anticipate claims 1, 3-77, and 79-106.

### ***Response to Arguments***

In response to Applicants' arguments that Takadoro et al. do not teach that "at least one rare earth element is in the tetravalent oxidation state", the reference, in Table 2, shows exemplary tetravalent cerium salts of cerium with 2-hydroxynicotinic acid. See Complex Nos. 50-60 in Table 2, as well as Complex Nos. 62-64, in which complexes of tetravalent cerium with  $\gamma$ -cyclodextrin are also depicted.

In response to Applicants' arguments that Takadoro et al. do not teach the claimed "solubility in water of between  $1 \times 10^0$  and about  $1 \times 10^{-5}$  moles per liter", this range of solubility is between 1 and 0.00001; the reference's "at least 0.1 mol/l, based on the rare earth element" falls between this range, despite its open-endedness. The range disclosed in Takadoro et al. is considered to fall with the solubility ranges recited in Applicants' dependent claims, as well.

Applicants' remaining arguments with respect to Takadoro et al. have been considered, but are not persuasive. Because the reference is considered to read upon the claimed rare earth elements and valence stabilizers, Applicants' claim limitations

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regarding, inter alia, the decomposition temperatures and melting temperatures are also considered read upon by Takadoro et al.

In response to Applicants' arguments that DePue et al. do not teach that the "at least one rare earth element is in the tetravalent oxidation state", the Examiner notes that Applicants also state that the "oxidation state of the rare earth metal is not discussed." The tetravalent cerium salts disclosed by DePue et al. are considered to read upon the claimed "oxidation state".

Further, because DePue et al. disclose "slightly water-soluble" as no more than  $10^{-3}$  molar concentration (0.001) in a saturated aqueous solution, this molar concentration is within Applicants' claimed "solubility in water of between about  $1 \times 10^0$  and about  $1 \times 10^{-5}$ " (i.e., between about 1 and 0.00001).

Applicants' remaining arguments with respect to DePue et al. have been considered, but are not persuasive. Because the reference is considered to read upon the claimed rare earth elements and valence stabilizers, Applicants' claim limitations regarding, inter alia, the decomposition temperatures and melting temperatures are also considered read upon by DePue et al.

Although new claims 105 and 106 have been added, the subject matter therein, namely the corrosion-inhibiting pigment composition, has previously been examined and is therefore considered read upon by the cited references of record.

For these reasons, Applicants' arguments are not persuasive, and the rejections of record are maintained.

***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Patricia L. Hailey/plh  
Examiner, Art Unit 1755  
August 18, 2006

  
J.A. LORENZO  
SUPERVISORY PATENT EXAMINER